

# Recovery Plan Action Status

Plan Name: Clubshell/Northern Riffleshell (2 spp.)

Plan Status: Final

Plan Date: 21-Sep-94

Lead Agency: USFWS

Lead Office: Pennsylvania Ecological Services Field Office

(2814)

234-4090 )

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Northern riffleshell (Epioblasma torulosa rangiana), Clubshell (Pleurobema clava)	1	1.1	Delineate the ecosystems for the priority drainages identified for each species	Ongoing Not Current			U.S. Fish and Wildlife Service, Ecological Services Division, U.S. Fish and Wildlife Service, Fisheries, U.S. Fish and Wildlife Service, Environmental Contaminants, The Nature Conservancy, National Biological Service , USFWS Regional Office 5, USFWS Regional Office 3, USFWS Regional Office 4, State Natural Resources Agencies	Research: Other Information	Species Expert	Plus \$10k/yr for FY 97-98.
Northern riffleshell (Epioblasma torulosa rangiana), Clubshell (Pleurobema clava)	3	1.2	Identify other resource values within each ecosystem.	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, U.S. Fish and Wildlife Service, Fisheries, Academic institutions, The Nature Conservancy, USFWS Regional Office 5, USFWS Regional Office 3, USFWS Regional Office 4, State Natural Resources Agencies, Conservation Organizations and Land Trusts	Work type not yet selected	Labor type not yet selected	

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Northern riffleshell (Epioblasma torulosa rangiana), Clubshell (Pleurobema clava)	2	1.3	Identify activities or practices within each ecosystem that may affect the clubshell and northern riffleshell as well as other sensitive resources.	Ongoing Current			U.S. Fish and Wildlife Service, Ecological Services Division, U.S. Fish and Wildlife Service, Fisheries, U.S. Fish and Wildlife Service, Environmental Contaminants, Environmental Protection Agency , USFWS Regional Office 5, USFWS Regional Office 3, USFWS Regional Office 4, State Natural Resources Agencies	Work type not yet selected	Labor type not yet selected	
Northern riffleshell (Epioblasma torulosa rangiana), Clubshell (Pleurobema clava)	1	1.4	As a near-term conservation measure, identify and participate in ongoing environmental planning and regulatory compliance processes within each ecosystem..	Ongoing Current			U.S. Fish and Wildlife Service, Ecological Services Division, U.S. Army Corps of Engineers, Environmental Protection Agency , USFWS Regional Office 5, USFWS Regional Office 3, USFWS Regional Office 4, State Natural Resources Agencies	Other: Regulations	Labor type not yet selected	Plus \$30k total over FY 97-18
Northern riffleshell (Epioblasma torulosa rangiana), Clubshell (Pleurobema clava)	2	1.5	Help develop and implement comprehensive watershed plans.	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, USFWS Regional Office 5, USFWS Regional Office 3, USFWS Regional Office 4, State Natural Resources Agencies	Work type not yet selected	Labor type not yet selected	Plus \$50k/yr for 5 more years (planning for approximately 2 drainages/yr)

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Northern riffleshell (Epioblasma torulosa rangiana), Clubshell (Pleurobema clava)	1	2.1	Monitor population status, including demographics, at existing sites through a collecting protocol.	Ongoing Current			U.S. Fish and Wildlife Service, Ecological Services Division, U.S. Fish and Wildlife Service, Fisheries, U.S. Fish and Wildlife Service, Environmental Contaminants, USFWS Regional Office 5, USFWS Regional Office 3, USFWS Regional Office 4	Research: Population Surveys	Species Expert	Plus \$15k/yr for FY 97-18
Northern riffleshell (Epioblasma torulosa rangiana), Clubshell (Pleurobema clava)	1	2.2	Identify and map both actual and potential threats at existing sites and potential translocation sites.	Ongoing Current			U.S. Fish and Wildlife Service, Ecological Services Division, National Biological Service , Environmental Protection Agency , USFWS Regional Office 5, USFWS Regional Office 3, USFWS Regional Office 4, State Natural Resources Agencies	Work type not yet selected	Labor type not yet selected	Spot sampling over recovery period in conjunction with Task 2.1. \$125k total projected cost for 98-18
Northern riffleshell (Epioblasma torulosa rangiana), Clubshell (Pleurobema clava)	1	2.3	Enforces all laws and regulations pertaining to the collection of specimens and protection of mussel habitat.	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, U.S. Army Corps of Engineers, Environmental Protection Agency , USFWS Regional Office 5, USFWS Regional Office 3, USFWS Regional Office 4, State Natural Resources Agencies	Work type not yet selected	Labor type not yet selected	No itemized costs.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Northern riffleshell (Epioblasma torulosa rangiana), Clubshell (Pleurobema clava)	2	2.4	Conduct site-specific protection and management programs.	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, National Park Service, U.S. Fish and Wildlife Service, Fisheries, U.S. Forest Service, The Nature Conservancy, Environmental Protection Agency, USFWS Regional Office 5, USFWS Regional Office 3, USFWS Regional Office 4, State Natural Resources Agencies	Work type not yet selected	Labor type not yet selected	Plus \$10k/yr for FY 98-18
Northern riffleshell (Epioblasma torulosa rangiana), Clubshell (Pleurobema clava)	2	2.5	Conduct searches, as warranted, for additional populations.	Ongoing Current			U.S. Fish and Wildlife Service, Ecological Services Division, U.S. Fish and Wildlife Service, Fisheries, U.S. Fish and Wildlife Service, Environmental Contaminants, The Nature Conservancy, USFWS Regional Office 5, USFWS Regional Office 3, USFWS Regional Office 4, State Natural Resources Agencies	Work type not yet selected	Labor type not yet selected	Surveys of the Shenango River in Pennsylvania were initiated in 2009 by USGS. WVDNR is completing survey of the Elk River. Surveys of the Darby Creek system in Ohio are ongoing. Some reaches of the Green River are monitored annually in Kentucky.
Northern riffleshell (Epioblasma torulosa rangiana), Clubshell (Pleurobema clava)	1	3.1	Determine contaminant sensitivity for each life stage.	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, Environmental Protection Agency, USFWS Regional Office 5, USFWS Regional Office 3, USFWS Regional Office 4	Work type not yet selected	Labor type not yet selected	Plus \$30k in 98

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Northern riffleshell (Epioblasma torulosa rangiana), Clubshell (Pleurobema clava)	1	3.2	Complete life history studies for each species.	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, Academic institutions, USFWS Regional Office 5, USFWS Regional Office 3, USFWS Regional Office 4	Work type not yet selected	Labor type not yet selected	Possible follow-up studies as needed. Costs not included.
Northern riffleshell (Epioblasma torulosa rangiana), Clubshell (Pleurobema clava)	2	3.3	Characterize the habitat that best supports these species.	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, Academic institutions, National Biological Service, USFWS Regional Office 5, USFWS Regional Office 3, USFWS Regional Office 4, Private Organizations and Research Institutions, State Natural Resources Agencies	Work type not yet selected	Labor type not yet selected	Acquire data in conjunction with Tasks 2.1, 2.2, 3.1, and 3.2.
Northern riffleshell (Epioblasma torulosa rangiana), Clubshell (Pleurobema clava)	3	3.4	Undertake genetic studies to determine the species' limits.	Partially Complete			Academic institutions, Private Organizations and Research Institutions	Work type not yet selected	Species Expert	USGS completed genetic studies of clubshells from several populations, however, few samples of Pleurobema oviforme were included so questions remain regarding the species in the Cumberland and Tennessee Rivers.  A northern riffleshell genetic study was completed of the three reproducing populations. No specimens were available from the Green River, Elk River, or Big Darby Creek, so how these populations are related is still in question.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Northern riffleshell (Epioblasma torulosa rangiana), Clubshell (Pleurobema clava)	1	3.5	Identify the potential effects of, and responses to, zebra and/or quagga mussel invasions, and their control measures.	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, U.S. Fish and Wildlife Service, Fisheries, USFWS Regional Office 5, USFWS Regional Office 3, USFWS Regional Office 4, State Natural Resources Agencies	Work type not yet selected	Labor type not yet selected	Plus \$10k/yr for 3 years. This task will rely in large part on studies conducted under other auspices.
Northern riffleshell (Epioblasma torulosa rangiana), Clubshell (Pleurobema clava)	2	4.1	Select potential translocation sites.	Ongoing Current			U.S. Fish and Wildlife Service, Ecological Services Division, Academic institutions, The Nature Conservancy, USFWS Regional Office 5, USFWS Regional Office 3, USFWS Regional Office 4, State Natural Resources Agencies, Conservation Organizations and Land Trusts	Work type not yet selected	Labor type not yet selected	A Structured Decision Making Workshop was completed in May 2009 to bring state and federal representatives together to develop a augmentation plan.  Illinois has selected sites for clubshell augmentation/relocation and is seeking animals from the closest clubshell population in Indiana.
Northern riffleshell (Epioblasma torulosa rangiana), Clubshell (Pleurobema clava)	2	4.2	Translocate portions of existing populations.	Ongoing Current			U.S. Fish and Wildlife Service, Ecological Services Division, U.S. Fish and Wildlife Service, Fisheries, USFWS Regional Office 5, USFWS Regional Office 3, USFWS Regional Office 4, State Natural Resources Agencies	Research: Reintroduction	Species Expert	A northern riffleshell augmentation is ongoing in Big Darby Creek in coordination with OSU and the Columbus Zoo. 1800 adult northern riffleshells were distributed in six sites. Monitoring is ongoing.  Captive propagated clubshells were released in the Green River Kentucky in 2008 to augment an existing population.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Northern riffleshell (Epioblasma torulosa rangiana), Clubshell (Pleurobema clava)	3	4.3	Release additional hosts.	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, U.S. Fish and Wildlife Service, Fisheries, USFWS Regional Office 5, USFWS Regional Office 3, USFWS Regional Office 4, State Natural Resources Agencies	Work type not yet selected	Labor type not yet selected	Not likely to be initiated within the first 3 fiscal years. Total projected cost of 50K.
Northern riffleshell (Epioblasma torulosa rangiana), Clubshell (Pleurobema clava)	3	4.4	Monitor new populations.	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, USFWS Regional Office 5, USFWS Regional Office 3, USFWS Regional Office 4, State Natural Resources Agencies	Work type not yet selected	Labor type not yet selected	Plus \$15k for FY 98-15
Northern riffleshell (Epioblasma torulosa rangiana), Clubshell (Pleurobema clava)	3	5.1	Distribute an educational video.	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, National Park Service, U.S. Forest Service, USFWS Regional Office 5, USFWS Regional Office 3, USFWS Regional Office 4, State Natural Resources Agencies	Work type not yet selected	Labor type not yet selected	A freshwater mussel video has been developed.
Northern riffleshell (Epioblasma torulosa rangiana), Clubshell (Pleurobema clava)	2	5.2	Increase public agency awareness of existing laws that protect these species.	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, USFWS Regional Office 5, USFWS Regional Office 3, USFWS Regional Office 4, State Natural Resources Agencies	Work type not yet selected	Labor type not yet selected	

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Northern riffleshell (Epioblasma torulosa rangiana), Clubshell (Pleurobema clava)	2	5.3	Encourage public involvement in the recovery process.	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, The Nature Conservancy, USFWS Regional Office 5, USFWS Regional Office 3, USFWS Regional Office 4, State Natural Resources Agencies	Work type not yet selected	Labor type not yet selected	Plus \$5k/yr for FY 98 and 18
Northern riffleshell (Epioblasma torulosa rangiana), Clubshell (Pleurobema clava)	3	5.4	develop and distribute educational materials.	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, National Park Service, U.S. Forest Service, USFWS Regional Office 5, USFWS Regional Office 3, USFWS Regional Office 4, State Natural Resources Agencies	Work type not yet selected	Labor type not yet selected	Plus \$8k/yr over 10 years, periodically.
Northern riffleshell (Epioblasma torulosa rangiana), Clubshell (Pleurobema clava)	3	5.5	Use media opportunities to reach the general public.	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, USFWS Regional Office 5, USFWS Regional Office 3, USFWS Regional Office 4, State Natural Resources Agencies	Work type not yet selected	Labor type not yet selected	No itemized costs.
Northern riffleshell (Epioblasma torulosa rangiana), Clubshell (Pleurobema clava)	3	5.6	Make presentations.	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, USFWS Regional Office 5, USFWS Regional Office 3, USFWS Regional Office 4, State Natural Resources Agencies	Work type not yet selected	Labor type not yet selected	Plus \$1k/yr for FY 98-18